LEWIS RIVER KNOTWEED CONTROL PILOT PROJECT 2006 REPORT

CLARK COUNTY WEED MANAGEMENT

11104 NE 149TH STREET
BUILDING C, SUITE 200
BRUSH PRAIRIE, WA 98606
(360) 397-6140
FAX (360) 397-6122

PHILIP BURGESS
DIRECTOR

RICHARD FULLER
PROJECT COORDINATOR

In 2004, Clark County Weed Management, under the guidance of Phil Burgess, department director, requested and received funds for a knotweed pilot project to be conducted on the Lewis River and its tributaries. This report provides a basic review of the work accomplished during the 2006 treatment season, with seasonal comparison information to include 2004, 2005. Recommendations and goals for the future. The attached spreadsheets provide for more detailed data for all infestations.

The start date for 2006 was May 1, beginning with an evaluation survey of the 2004 and 2005 treated sites along the East Fork of the Lewis River. First application of the retreat sites along the river began on May 8th. Re-treatment portions of the East Fork and treatment of newly discovered sites within the East Fork corridor were completed by September 9th.

Pilot Project Goal for 2006:

The primary goal was to survey the main stem and tributaries of all river and creek systems previously treated in 2004 and 2005. Re-treat all re-growth sites, search for and treat any knotweed infestation at least once not previously discovered during prior year surveys (follow-up application as needed). It was decided that a complete seasonal focus on Lewis River system would provide for better coverage and treatment to control any old or new infestations.

The waterways included in this year's project were East Fork Lewis River including Upland sites (third season treatment), North Fork Lewis River, Cedar Creek, Pup Creek, Chelatchie Creek, and Speelyai Creek including Upland sites (second season treatments).

Foliar treatment was to be used over injection delivery as sites were primarily in a state of re-growth from previous year treatments. Infestations were small in size (cane diameter) or returned in a vine like growth as stalk was too thin to support leaf weight. However newly discovered sites supplied ample numbers of large cane to inject, attributing to nearly 11,000 canes injected in 2006 project.

Paid Labor:

One project coordinator and two field laborers were paid for work performed in 2006. The projected number of three field workers was not met as no qualified applicants surfaced to join work force. This shortage of field personnel attributed to additional man hours to accomplish treatment or transportation tasks. In addition there was no licensed person in the field to help manage more than one treatment team. Field personnel were employed for a four and a half month period.

Description of Project Area :

The East Fork Lewis River main stem totals 32.5 miles from Sunset Campground, at the border between Clark and Skamania counties, down to its confluence with the North Fork Lewis River. This river course is subject to heavy flooding during the winter.

Cedar Creek is the main tributary of the North Fork Lewis. This 20 mile creek is fed by a series of smaller tributaries accounting for 60 miles of waterways. Of these tributaries, Pup Creek (5 miles) and Chelatchie Creek (7 miles) were surveyed, and treated as needed. These tributaries accounted for 12 miles of the contributing waterways. These creeks are subject to heavy flooding during the winter.

North Fork Lewis River main stem totals 21 miles from Ariel Dam to the Columbia River. The North Fork has a vast array of ecological communities to support. It is an important habitat for salmon and steelhead supports a variety of wildlife such as bald eagles, osprey, beaver, blue

heron, and various species of geese, duck and other water fowl. There are two Washington State fish hatcheries located on the river. This river course is subject to heavy flooding during the winter.

Ariel Dam creates Lake Merwin (25 shoreline miles). Above Lake Merwin is Yale Lake (19 shoreline miles). One site was discovered in survey of 2005 and continued to be the only site to be treated at either of these lakes. Lake Merwin and Yale Lake are maintained by Pacific Power and Electric.

Survey and Re-treatment :

East Fork Lewis River:

Survey and Re-treatment: (Third Season Treatment)

- Project start date: May 8, 2006
  - All sites along the 32 miles of the East Fork were visited and accessed either by driving to the site or hiking into the site as needed. Treatment of 2004 and 2005 sites were the focus of this season's project. Also to seek out any unfound sites not previously discovered. Sites outside the original search area have been found to have heavy concentrated old growth infestations. This waterway was subject to heavy flooding in 1996, water flooding far beyond its banks and at some junctures has changed the river's course. After finding several sites beyond the rivers current banks we have had to expand search area to include flood plain area of 1996.
  - Sunset Falls.
  - Sunset Falls Rd. and Lucia Falls Rd.
  - Moulten Falls.
  - Sites below Moulten Falls along Lucia Falls Rd. to Lucia Falls.
  - Sites below Lucia Falls along Lucia Falls Rd. to Heisson Bridge.
  - Cole Witter Rd. and surrounding sites.
  - Lewisville Park
  - Rinker area
  - Daybreak Park
  - Daybreak Maintenance Station
  - Storedahl
  - Swanson's
  - Swanson's to La Center
  - Upland sites
  - Canes treated in first year project (2004) numbered 119,827, in (2005) it was reduced to 38,523, and then for (2006) treated canes were down to 19,743.
- Project completed date: September 5, 2006

Cedar Creek: (Second Season Treatment)

- Project start date: July 3, 2006
  - Starting at Amboy Bridge, up stream to head waters, access was done by driving to various points along the creek and hiking up stream or down stream as needed to complete surveys (9 miles).
  - Starting at Amboy Bridge, down stream to above Grist Mill (8 miles) dragging kayaks to transport herbicide and equipment were used to access and treatment sites. Prior to settling on two, small 6-foot plastic kayaks, and several methods of transporting equipment through cedar creek were tried. During the summer months into winter the creek does not have enough water to support a craft of any size for any long distances. The raft used in 2005 was found to be too heavy and awkward to use in the confined banks of this small creek. This season the team attempted to use a lighter craft, an aluminum canoe for a six mile stretch from Amboy bridge to Wright Bridge. This craft also was too heavy and awkward to maneuver through the creek. Then by connecting a shoulder strap to a kayak it was found that this was an easier craft to deal with and drag over the rock bed , wooded areas , and waterfalls of the creek course. Team was able to carry about 100 pounds of herbicide and equipment each with the use of these kayaks. Kayaks were provided by a friend of the East Fork and waterways, Mike Olsen, a local kayak enthusiast.
  - From the Grist Mill to the Mouth of Cedar Creek dragging kayaks to transport herbicide and equipment were used to access and treat sites (3 miles).
  - During treatment the cane count was less this year (2006), than in 2005 indicating a very high degree of success in this water corridor.
  - Cane count in (2005) was 51,498 as compared to (2006) with 2,674 canes treated.
- Project completed date: October 12, 2006

Chelatchie Creek: (Second Season Treatment)

- Project start date : May 31, 2006
  - Sites treated in 2005 project were surveyed for re-growth and treated as needed. Starting at Amboy to headwaters (Tum Tum Mountain) (7 miles), access was done by driving to various points along the creek and hiking up and down stream as needed to complete the survey.
- Project completed date : June 20, 2006

Pup Creek (5miles): (Second Season Treatment)

- Project start date : July 13, 2006
  - Pup Creek was accessed by Cedar Creek Rd., and hiked down stream to complete survey and any treatment. In 2005 a private land owner at his own expense took his crew and performed cut stump treatment. Clark county team followed to re-treat any re-growth. However in 2006 it was discovered that the method used in 2005 did not take and re-growth was found to be excessive and had actually increased in growth as far as number of canes to treat. In (2005), 2,521 canes treated over cut stump treatment and in (2006), 15,383 canes treated.
- Project completed date: September 12, 2006

North Fork Lewis River: (Second Season Treatment)

- Project start date: June 5, 2006
  - The North Fork is a waterway different in characteristics from the East Fork and the tributaries. Much of its length is wide and slow moving. Ariel dam regulates water flow. Dikes shape the banks around Woodland, and reed canary grass becomes dominant. Access was accomplished by raft. There were limited sites available by land access.
  - Some sites were found to be clinging to cliff sides with high banks. As access was difficult an extra effort was made to treat all sites regardless of access difficulties.
  - Scotts broom and black berry growths were found to be heavier than a machete could clear. A gas powered brush cutter was introduced into equipment inventory.
  - When using a raft, a vehicle would need to be positioned at entrance point and exit point to transport personnel and equipment. The crew would row to and from the site, using the rivers current to advantage. Needless to say, this is very time consuming, often leaving only four hours daily to actually treat at any sites found.
  - Both Clark County and Cowlitz County sides of the river were surveyed and treated.
- Project completed date : August 25, 2006

Eagle Island: (Second Season Treatment)

- Re-growth from sites treated in 2005 was minimal, requiring only one visit to re-treat.

Yale Lake: (Second Season Treatment)

- Project start date : June 5, 2006
  - Site discovered in 2005 project was visited and treated as needed, in Cougar Park at the mouth of Cougar Creek.
- Project completed date : August 14, 2006

Survey Summary:

- 86 miles of river, creek, and tributaries were surveyed.
- Of this 40 miles total were treated for Japanese knotweed infestations.
- Totaling 87 acres and 251,265 canes treated.

As the 2006 season is the third year of treatment, it is expected as shown in the summary to have less river miles, acres and total canes treated. For example the number of canes re-treated in 2005 was 267,863 and in comparison the number of canes again re-treated in 2006 of the same sites is 111,241. A decrease of 156,622 canes from 2005 to 2006.

(Refer to spread sheet for comparison numbers)

The tributaries were approached differently. Whenever a tributary was encountered while surveying the main stem, that tributary was followed from its confluence to a point where it could be predicted there was a high probability of no knotweed occurring upstream. This prediction was based on remoteness of the location, lack of improved roads or home sites, or lack of knotweed found anywhere in the area.

- At a certain point, the likelihood of a knotweed patch existing in a remote tributary location must be weighed against the time and money expenditure needed to survey for that possible, but unlikely, knotweed patch.

After this, remaining sections of tributaries were surveyed from public vantage points (roads, bridges, county properties, trails), and on private properties when invited by the landowner. On many occasions, private landowners were willing to walk with us on their property so that we could survey.

Notes on Surveys

1. It can not be assumed that 100% of all knotweed infestations on the tributaries were found, even with this reasonable, systematic method. Surveying the entire length of all tributaries, including their seasonal drainages, requires much more time and complete landowner cooperation.
2. It also can not be assumed that 100% of all knotweed infestations were found within the 102 main stem survey miles and 43 tributary survey miles, due to the likelihood of human error. There is the possibility some small knotweed patches simply were not visually spotted. This is very evident on the East Fork due to the wide spread of water during the flood of 1996. This flooding relocated plant remnants throughout the river corridor, many of these areas have not been flooded since that time, so it was not expected to find infestations so far from the prominent river course. There is also heavy blackberry, brush and forested areas which have hidden any new site in the early stages of growth.

SEASONAL CANE COUNT COMPARISON

WATERWAY NAME		YEAR TREATED 2004	2005	2006
EAST FORK	3RD TREATMENT			19743
	2ND TREATMENT		38523	16094
	1ST TREATMENT	119827	36610	17914
JENNY CREEK	3RD TREATMENT			1069
	2ND TREATMENT		5185	
	1ST TREATMENT	860		
UPLAND CLARK CO.	3RD TREATMENT			358
	2ND TREATMENT		11749	622
	1ST TREATMENT	10812	3280	17256
NORTH FORK	2ND TREATMENT			53214
	1ST TREATMENT		120398	13993
CEDAR CREEK	2ND TREATMENT			2643
	1ST TREATMENT		51498	
CHELATCHIE CREEK	2ND TREATMENT			619
	1ST TREATMENT		20875	
PUP CREEK	2ND TREATMENT			15383
	1ST TREATMENT		2520	
SPEELYAI CREEK	2ND TREATMENT			264
	1ST TREATMENT		2940	
UPLAND COWLITZ	2ND TREATMENT			1232
	1ST TREATMENT		14175	2561
HIMALAYAN SITE	1ST TREATMENT			88300
CANES TREATED TOTALS BY YEAR :		131499	307753	251275

2006	HERBICIDE USAGE TOTALS FOR 2006 PROJECT(INJECTION / FOLIAR)									
	ALL WATER WAYS AND UPLAND SITES									
	LAST UP DATE : 10 - 23 - 2006									
	INJECTION AQUA - MASTER		TOTAL ACRES	TOTAL CANES		FOLIAR AQUA-MASTER		FOLIAR HABITAT	APPLIED GALLONS	TOTAL ACRES	TOTAL CANES
E F LEWIS - 3RD TREATMNT	.87		0.62	202		3.08		0.8	99.45	25.40	19541
E F LEWIS - 2ND TREATMNT	0.79		0.56	700		2.74		0.71	83.89	7.13	15394
E F LEWIS - 1ST TREATMNT	3.06		1.86	2481		2.97		0.77	95.95	4.61	15583
N. F LEWIS - 2ND TREATMNT	5.0		2.33	3673		8.45		2.18	272.74	15.70	49541
N. F LEWIS - 1ST TREATMNT	0.86		0.18	615		2.48		0.64	80.0	3.72	13378
CEDAR CRK	0.07		0.12	51		0.88		0.23	28.5	1.59	2592
CHELATCHIE	0		0	0		0.14		0.04	4.38	0.53	619
JENNY CREEK	0.05		0.01	38		0.26		0.07	8.25	0.41	1031
PUP CREEK	0		0	0		2.34		0.6	75.58	7.5	15383
SPEELYAI CRK	0		0	0		0.11		0.03	3.51	0.24	264
UPLAND - CLARK CO - 3RD TRTMENT	0.04		0.06	30		0.08		0.02	2.43	0.84	328
UPLAND - CLARK CO - 2ND TRTMENT	0.16		0.15	122		0.86		0.22	27.65	0.77	500
UPLAND - CLARK CO - 1ST TRTMENT	2.15		1.51	1542		1.84		0.48	59.42	7.09	15714
UPLAND - COWLITZ CO - 2ND TRTMENT	0		0	0		0.24		0.06	7.6	0.8	1232
UPLAND - COWLITZ CO - 1ST TRTMENT	1.82		0.42	1304		0.22		0.06	7.08	1.97	1257
HIMALAYAN SITE/CHELATCHIE	0		0	0		1.15		0.3	37.00	0.75	88300
	GALLONS		ACRES	CANES		AQUA-MASTER		HABITAT	GALLONS	ACRES	CANES
	14.9		7.82	10758		27.84		7.22	893.43	79.05	240517
	TOTAL ACRES			**87**			**TOTAL CANES**			**251275**	

Knotweed Statistics **(2004)**

- 247 infestations were recorded on 77 properties.
- Of the 77 properties, 18 are Clark County controlled. The other 59 are private.
- Of the 59 private properties, 43 were treated primarily by injection.
- 229 of the 247 infestations are on the main stem.

Knotweed Statistics **(2005)**

- 291 infestations were recorded on 150 properties.
- 28 properties owned by Clark County, 6 State of Washington, 18 Pacific Power and Electric, and 98 Private Property owners.
- 262 of the 291 infestations are located on the waterways.
- Combining the knotweed infestations totals 500 acres.
- 187 of the 291 infestations are influenced by regular flooding.

Knotweed Statistics **(2006)**

- 204 infestations were recorded on 116 properties.
- 28 properties owned by Clark County, 6 State of Washington, 18 Pacific Power and Electric, and64 Private Property owners.
- 88 of the 204 infestations are located on the waterways.
- Combining the knotweed infestations totals 87 acres.
- 116 of the 204 infestations are influenced by regular flooding.

Data Gathering:

Information was hand-entered at each site onto a pre-printed form (see-attached sample). Data includes needed information for WSDA Herbicide Application Form. Information recorded while in the field is :

- Date and times of treatment
- Acres of site
- Cane count
- Method of treatment
- Description of site (soil type, vegetation type)
- GPS number
- Wind speed and temperature
- Plant density
- Plant height

Appropriate information is taken from the sheet filled out in the field and later entered into the Herbicide Application Report. The Herbicide Application Report has been duplicated into a computer spread sheet. The report has been adjusted to provide particular information that pertains to the Japanese Knotweed Project. (see attached sample).

FOR JAPANESE KNOTWEED

INFORMATION SHEET FOR PESTICIDE APPLICATION REPORT

DATE:	
START TIME:	
FINISH TIME:	

LOCATION ADDRESS OR LOCATION DISCRIPTION

GPS#	

WATERWAY / CREEK / RIVER	

AREA IN ACRES TREATED :		**ACRES**

VEGETATION DISCRIPTION / SOIL TYPE :

	NATIVE RIPARIAN (RIVER OR CREEK BANKS)
	NATIVE VEGETATION W/ HIGH GRASS, BLACK BERRY,TREES
	RIVERROCK, SANDY
	FLOOD PLAIN

WIND SPEED AND DIRECTION:		
AIR TEMPERATURE :		

AMOUNT OF HERBICIDE USED FOR INJECTION :

NUMBER OF CONTAINERS USED :	
NUMBER OF CANES TREATED	

AMOUNT OF HERBICIDE USED FOR FOLIAR APPLICATION (SPRAY) :

	GALLONS		**QUARTS**		**PINTS**

NUMBER OF CANES TREATED :		**REASON FOR FOLIAR APLICATION**

PLANT HEIGHTH		**0" - 1'**		**1' - 5'**	
5' - 10'		**10' - 15'**		**10' - 20'**	

	REGROWTH FROM SHOOTS		**SCATTERED PLANTS**

	DENCE GROWTH

WSDA

PESTICIDE APPLICATION RECORD

(KNOTWEED)

NOTE: This form must be completed same day as the application and it must be retained for 7 years

Plant Protection Division
P.O. Box 42560
Olympia, WA. 98504 - 2560

1. YEAR OF APPLICATION	MONTH OF APPLICATION	DAY OF APPLICATIO	START TIME OF APPLICATION	STOP TIME OF APPLICATION
2006	JUNE	13	0915	1030

2. NAME OF PERSON FOR WHOM PESTICIDE WAS APPLIED	FIRM NAME (IF APPLICABLE
RICHARD FULLER	CLARK COUNTY WEED MANAGEMENT

STREET ADDRESS	CITY	STATE	ZIP
11104 NE 149th STREET	BRUSH PRAIRIE	WA.	98606

LICENSE NUMBER: 68950

FIRM NAME (IF APPLICABLE)	TELEPHONE NUMBER
CLARK COUNTY WEED MANAGEMENT	(360) 397 - 6140

3. LICENSED APPLICATORS NAME (IF DIFFERENT FROM #2 ABOVE)	LICENSE NUMBER	CITY	STATE	ZIP
		BRUSH PRAIRIE	WA.	98606

4. PERSON "A" WHO APPLIED PESTICIDE (IF DIFFERENT FROM #3 ABOVE	PERSON "A"LICENSE NUMBER	PERSON "B" WHO APPLIED PESTICIDE	PERSON"B"LICENSE NUMBER
PERSON "C" WHO APPLIED PESTICIDE	PERSON"C"LICENSE NUMBER	PERSON "D" WHO APPLIED PESTICIDE	PERSON"D"LICENSE NUMBER

5. APPLICATION CROP OR SITE	6. TOTAL AREA TREATED	
NATIVE RIPARIAN VEGETATION , TREES,BERRY BUSHES,HIGH GRASS,RIVER ROCK AND SANDY SC	0.75	ACRES
WATERWAY : EAST FORK — COUNTY : CLARK	1,100	CANES
GPS# 068ATWELL4 — SERIAL# 225194-000	1ST	SEASON OF TREATMENT
	YES	FLOOD PLAIN

7. PLEASE LIST ALL INFORMATION FOR EACH PESTICIDE IN THE TANK MIX (INCLUDING SURFACTANTS) OR PESTICIDE INJECTED

(A) PRODUCT NAME	(B) EPA REG. NO.	(C) TOTAL AMOUNT OF HERBICIDE APPLIED IN TREATED AREA	(D) HERBICIDE APPLIED/ACRE/OTH	(E) CONCENTRATION APPLIED
AQUAMASTER	524 - 343	.031 /GAL.	.031 GAL./ACRE	4 Oz/Gal.
"HABITAT"	241 - 426	.008 /GAL.	.008 GAL./ACRE	1 Oz/Gal.- .83%
ADJUVANT	ADJUVANT	.016 /GAL.	.016 GAL./ACRE	2 Oz/Gal.
	TOTAL	1 GAL.		
AQUAMASTER	524 - 343	1.06 /GAL.	1.06 GAL./ACRE	100%

8. Address or geographical coordinates of application: ATWELL RESIDENCE - BELOWDAYBREAK PARK

Note: if application is made to one or more acres of agricultural land, the field location must be shown on the map on page two of this form

Treatment Methods

East Fork Lewis:

The 2006 project began with the East Fork of the Lewis River. Treatment of 2004 and 2005 sites were the focus of this season's project. Also to seek out any undiscovered sites not previously found. Sites outside the original search area have been found to have heavy concentrated old growth infestations. This waterway was subject to heavy flooding in 1996, water flooding far beyond its banks and at some junctures has changed the river's course. After finding several sites beyond the rivers current banks we have had to expand search area to include flood plain area of 1996.

Return growth at sites treated in 2004 and 2005 were found to be stunted or mutated. When this occurred, foliar spray was the primary method of treatment. However there were still a number of sites with canes large enough to inject. There were 202 canes injected and 19,541 canes treated by foliar spray at the re-treatment sites originally treated in 2004. There were 700 canes injected and 15,394 canes treated by foliar spray at the re-treatment sites originally treated in 2005. As treatment progressed along the East Fork there were several sites discovered that were not treated in 2004 and 2005. These new sites account for 2,481 injected canes and 15,583 foliar sprayed canes. (Refer to Comparison Spreadsheet)

Jenny Creek:

Methods of treatment were the same for jenny Creek as for the East Fork, accounting for 38 canes injected and 1031 canes treated by foliar spray. Significantly less treated, than in 2005. (Refer to Comparison Spreadsheet)

Cedar Creek:

As the project progressed into Cedar Creek it was found that the canes were of smaller diameter, therefore foliar spray was used. As this is the second season for treatment, cane diameter size was affected by previous year's treatment. The Cedar Creek ravine is deep and shaded by surrounding trees with high stream banks therefore there is a sufficient difference in available light for growth. Given this, there were 51 canes injected compared to 2,592 canes treated by foliar spray. Significantly less treated, than in 2005. (Refer to Comparison Spreadsheet)

Pup Creek:

This waterway was affected by 2005 treatment not managed by Clark County. A private party took it upon themselves to treat Pup Creek on their own. The treatment method used was "cut stump". As to the herbicide used, this is unknown. The 2005 team followed later and treated any re-growth. In 2006 it was found that all "cut stump" treated returned with a vengeance. This I believe accounts for the high number of return canes. As growth was stunted, foliar application was used to treat 15,383 canes. Significantly higher numbers than from 2005. (Refer to Comparison Spreadsheet)

Chelatchie Creek:

This waterway showed significantly less numbers of canes treated. The numbers from 2005 included upland sites that were located on or near tributaries into Chelatchie Creek. As these sites were not engulfed by seasonal flooding I believe accounts for the very low numbers of return growth. In 2005, the team injected 8,215 canes and sprayed 12,660 canes.

In 2006 only 619 canes were treated. Significantly less treated, than in 2005. (Refer to Comparison Spreadsheet)

North Fork Lewis River:

This river course is vastly different in character than all of the other project waterways. The North Fork is a large river, controlled by water released from Merwin Dam. It is teeming with wild life. On a daily basis eagles, osprey, blue heron, beavers, deer, salmon, ducks, elk

can be observed in their natural habitat. The river banks extend several hundred feet in some places creating a significant difference in available light due to river bank height. Also, the top ridges and banks are heavily forested with tall native Cedar and various species of conifer trees, combined with other foliage. Most often, the south side of the river is covered in shade until late afternoon.

As the site locations are set in such a wild atmosphere it is no wonder how they have grown into such impressive sites, sometimes extending a quarter mile or more.

"The Big Kahuna" is one such site. In 2005 the cane count was 43,600. In 2006 re-growth accounted for 13,975 canes to re-treat and 3,825 canes for first time treatment. Sections of this site are located on an elevated bank that made access difficult. Among the knot weed,

are old growth blackberry bush that had grown to about 5 ½ feet high. Using a gas powered bush whacker the team cut a maze of paths through the berry bushes to reach and treat the knotweed infestations. This site was not a unique infestation as there were several sites throughout the river system with similar statistics.

Speelyai Creek:

In 2005 there were 1,280 canes injected and 1,660 canes treated with foliar spray. In 2006 there were only 264 canes to treat with foliar spray.

Upland Sites (Clark County and Cowlitz County):

Upland sites were primarily sites located away from program waterways. These sites, though not an immediate threat to the river systems, were treated to remove any further spread and any possible threat in the future to the near by waterways. Sites were mostly private property. Treatment in 2005 accounted for 5,459 injected canes, 23,745 foliar sprayed canes. For 2006 there was a significant decrease in re-treatment sites. There were 152 canes injected and 2,093 canes treated by foliar spray. In addition there were 2,846 canes injected as first time treatment and 16,971 treated for the first time with foliar spray.

One of these sites located in La Center, Wa. , is known as the Frazier site accounted for 12,000 canes for treatment.

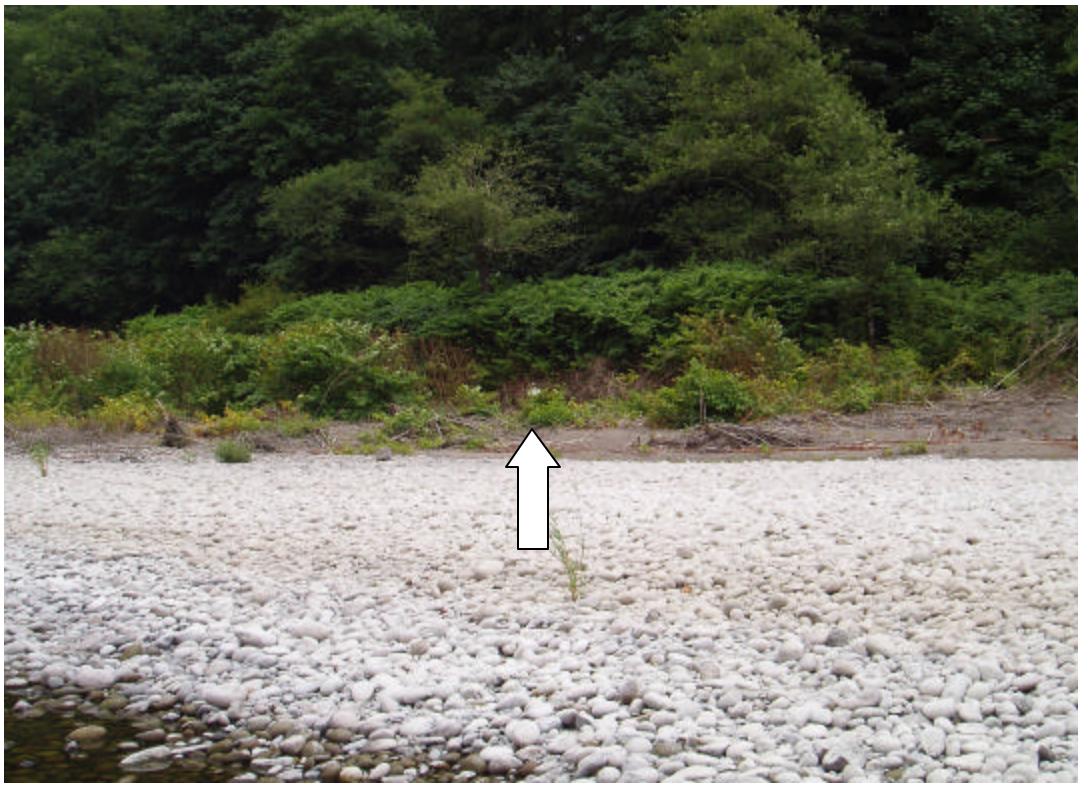
Himalayan site :

This site was unique in that it was the only Himalayan Knotweed infestation that was found within the Project survey boundaries. This site located on a mountain side was growing just above a tributary to Chelatchie Creek. The total area was just more than ½ acre. Measurements were taken creating flagged plots within the site. Cane count within each plot was taken and averaged to account for total canes within the site. A number of 88,300 canes was arrived at using this process.

In the large, dense infestations away from water, a foliar combination of glyphosate (4 oz / gal) in the form of Aqua master, imazapyr (1 oz / gal) in the form of Habitat, and surfactant (2 oz / gal) in the form of Agri - Dex was used for the initial treatment.

North Fork Lewis River – The Big Kahuna

The Big Kahuna



The Big Kahuna (See Team Member At Arrows)

North Fork Lewis River

Cliff Side Application – North Fork Lewis River

Cedar Creek

Doing The Cedar Creek Shuffle

Himalayan Knotweed Site

Himalayan Site

Treatment of Infestations by Method: **2004**

Treatment Method	Number of Sites Treated	Number of Canes Treated
Injection only (Aqua-Master)	124	
Foliar spray(Aqua / Habitat / Agri-Dex) only	55	
Injection / Foliar spray combination treat	68	
Total	**247**	**124,200**

Treatment of Infestations by Method: **2005**

Treatment Method	Number of Sites Treated	Number of Canes Treated
Injection only (Aqua-Master)	47	23,570
Foliar spray (Aqua / Habitat / Agri-Dex) only	181	148,050
Injection / Foliar spray combination treat	63	136,133
Total	**291**	**307,753**

Treatment of Infestations by Method: **2006**

Treatment Method	Number of Sites Treated	Number of Canes Treated
Injection only (Aqua-Master)	16	2,799
Foliar spray (Aqua / Habitat / Agri-Dex) only	181	216,938
Injection / Foliar spray combination treat :	41	
Injection		7,714
Foliar spray		23,824
Total	**204**	**251,275**

A good portion of the infestations also received a second treatment. Many of these follow-up treatments relied more heavily on the foliar method. This is particularly true at infestations where only smaller canes remained after the initial injection of the larger canes. When large canes remained (which were likely missed during the initial application), they were injected, not sprayed. A more detailed breakdown of follow-up treatments can be derived from the attached spreadsheets.

Field Personnel:

As this project expands in size each year, encompassing several water systems, there is a need to increase the man power to match the expected goals of the project. Adding one more field person will give the team more ability to survey and treat sites in more than one location at a time. As more and more time is being required to survey and retreat the previous years sites it will leave less time for initial surveys and treatments. It is recommended that two field workers have the Aquatics License in place, in order to make the teams more versatile. As re-treatment of all previous waterways and the initial treatment of the Washougal River are in the proposed project for 2007 an increase of manpower should be a consideration and the ability to split into two application teams.

Recommendations to Clark County:

- Appropriate transportation is required to perform the duties for this project. Two four wheel drive vehicles that are capable of carrying more than two passengers and needed equipment, herbicides, rafting equipment.
- A gas powered brush whacker is needed due to the dense black berry hedges and dense brush infestations that are required to be cleared during treatment. These growths are much too large to manage with a machete.
- Either a small electric motor for the raft or the use of the county's wave runner to add some power to raft and transport personnel on the North Fork is recommended, as this would add hours a day to treatment time by lessoning the travel time.

Clark County Weed Management Goals for 2007:

- Search outside the traditional river course of the East Fork of the Lewis River for old growth infestations created by the 1996 flooding, identify and treat.
- Perform an evaluation survey of control work on the East Fork Lewis River, and treat all remaining infestations.
- Perform an evaluation survey of control work on Cedar Creek, Pup Creek, Chelatchie Creek, and treat all remaining infestations.
- Perform an evaluation survey of control work on the North Fork Lewis River, and treat all remaining infestations.
- Perform an evaluation survey of control work on the Himalayan site, and treat all remaining infestations.
- Perform an evaluation survey of control work on the Upland sites in Clark Co. and Cowlitz Co., treat all remaining infestations.
- Begin initial survey and treatment of the Washougal River and any tributaries.

Clark County Weed Management is thankful to WSDA for their support.

2006	HERBICIDE USAGE TOTALS PER SITE (INJECTION / FOLIAR)										
East Fork Lewis River											
Third Season Treatment Sites											
Site	Date	Injection	Total	Total		Foliar	Foliar	Applied	Total	Total	Trtmt
Location	Applied	Aqua -Master	Acres	Canes		Aqua -Master	Habitat	Gallons	Acres	Canes	Season
Name		Gallons				Gallons	Gallons				
SUNSET FALLS RD.	5/8/06					0.00012	0.00003	0.004	0.0023	2	3
SUNSET FALLS RD.	7/21/06					0.0009	0.0002	0.028	0.12	8	3
LUCIA/SUNSET RD	5/8/06	0.003	0.0023	2		0.0005	0.0001	0.016	0.0034	13	3
LUCIA/SUNSET RD	7/21/06					0.0012	0.0003	0.04	0.06	10	3
1- BLW MOULTON	5/8/06					0.00016	0.00004	0.005	0.0006	3	3
LG BLW MOULTON	5/8/06	0.004	0.01	3		0.0020	0.0005	0.066	0.08	20	3
LG BLW MOULTON	6/28/06					0.02	0.01	0.75	0.08	50	3
LG BLW MOULTON	7/21/06					0.0047	0.0012	0.151	0.08	50	3
LG BLW MOULTON	9/6/06					0.03	0.01	1	0.08	175	3
ROGERS & NEIGHBOR	5/8/06	0.004	0.01	3		0.0004	0.0001	0.013	0.036	10	3
ROGERS & NEIGHBOR	7/21/06					0.0054	0.0014	0.174	0.12	62	3
DYBRK MNT. RDSIDE	5/11/06	0.026	0.01	20		0.0155	0.0040	0.5	0.115	50	3
DYBRK MNT. RDSIDE	7/13/06					0.0078	0.0020	0.25	0.06	60	3
LEWISVILLE PARK	5/12/06	0.025	0.01	19		0.0014	0.0004	0.046	0.17	10	3
LEWISVILLE PARK	5/12/06					0.0020	0.0005	0.066	0.066	30	3
SWANSONS	6/20/06					0.1705	0.0440	5.5	0.5	1100	3
SWANSONS	6/20/06					0.1705	0.0440	5.5	0.5	950	3
SWANSONS	6/30/06					0.0310	0.0080	1	0.06	100	3
SWANSONS	7/28/06					0.0186	0.0048	0.6	0.06	60	3
SWANSONS	8/28/06					0.2170	0.0560	7	0.12	1600	3
SWANSONS	9/5/06					0.1705	0.0440	5.5	0.12	750	3
PEACOCK	6/6/06					0.0007	0.0002	0.021	0.12	7	3

WALL O' KNOT	6/6/06					0.0543		0.0140	1.75	1	380	3
WALL O' KNOT	6/6/06					0.1240		0.0320	4	1	1200	3
WALL O' KNOT	7/7/06					0.0853		0.0220	2.75	0.25	475	3
WALL O' KNOT	8/1/06					0.0310		0.0080	1	0.12	150	3
HEISSON BRIDGE	6/7/06					0.0016		0.0004	0.053	0.01	10	3
BURMEISTER	6/7/06	0.132		0.5	95	0.0041		0.0011	0.132	0.5	70	3
		GALLONS		ACRES	CANES	GALLONS		GALLONS	GALLONS	ACRES	CANES	
		0.19		0.54	142	1.18		0.30	37.92	5.43	7405	

EAST FORK LEWIS - THIRD SEASON CONTINUED

SITE / LOCATION / NAME	DATE APPLIED	INJECTION AQUA -MASTER GALLONS	TOTAL ACRES	TOTAL CANES	FOLIAR AQUA -MASTER GALLONS	FOLIAR HABITAT GALLONS	APPLIED GALLONS	TOTAL ACRES	TOTAL CANES	TRTMNT SEASON
ARAB HOUSE	6/7/06				0.031	0.008	1	0.06	300	3
STOREDAHL'S	6/21/06				0.28	0.07	9	5	1800	3
STOREDAHL'S	6/21/06				0.28	0.07	9	2	1800	3
STOREDAHL'S	8/17/06				0.19	0.05	6	1	500	3
STOREDAHL'S	8/31/06				0.28	0.07	9	0.5	1800	3
DYBRK MNT. RVRSIDE	6/22/06	0.007	0.01	5	0.09	0.02	3	0.99	600	3
DYBRK MNT. RVRSIDE	6/22/06	0.007	0.01	5	0.03	0.01	1	2.99	250	3
T O T	6/22/06				0.20	0.05	6.5	3	1625	3
T O T	6/22/06				0.19	0.05	6	4	1500	3
T O T	8/31/06				0.20	0.05	6.5	0.06	1300	3
LUCIA PARK	6/29/06				0.02	0.00	0.5	0.06	89	3
WILLEY	7/13/06				0.04	0.01	1.25	0.12	135	3
DAYBREAK PARK	6/7/06	0.66	0.06	50	0.0205	0.0053	0.66	0.06	17	3
DAYBREAK PARK	8/2/06				0.00	0.00	0.12	0.01	10	3
DAYBREAK PARK	7/7/06				0.0620	0.0160	2	0.12	410	3
		GALLONS	ACRES	CANES	GALLONS	GALLONS	GALLONS	ACRES	CANES	
		0.87	0.62	202	3.08	0.80	99.45	25.40	19541	

TOTAL ACRES	26.03	TOTAL CANES	**19743**

2006	HERBICIDE USAGE TOTALS PER SITE (INJECTION / FOLIAR)											
East Fork Lewis River												
Second Season Treatment Sites												
Site	Date	Injection	Total	Total		Foliar	Foliar	Applied	Total	Total	Trtmt
Location	Applied	Aqua -Master	Acres	Canes		Aqua -Master	Habitat	Gallons	Acres	Canes	Season
Name		Gallons				Gallons	Gallons				
RINKER FIELD	5/31/06					0.0020	0.0005	0.063	0.0023	6	2
RINKER FIELD	8/1/06					0.0078	0.0020	0.25	0.0023	15	2
DAYBREAK PARK	6/2/06					0.0007	0.0002	0.024	0.0023	6	2
DAYBREAK PARK	6/2/06					0.0015	0.0004	0.048	0.12	12	2
GEORGIA RICH	7/26/06					0.0233	0.0060	0.75	0.01	45	2
GOLIATH	6/13/06	0.66	0.5	600		0.00	0.00	0			2
GOLIATH	6/13/06					0.093	0.024	3	0.33	675	2
GOLIATH	8/21/06					0.00	0.00	0	0.12	1050	2
GOLIATH	8/21/06	0.132	0.06	100		0.43	0.11	14	0.44	2450	2
GOLIATH	8/31/06					0.40	0.10	12.75	0.25	2295	2
BLW DAYBRK PARK	8/2/06					0.01	0.00	0.25	0.01	50	2
BLW DAYBRK PARK	8/2/06					0.01	0.00	0.25	0.01	20	2
BECKER	8/16/06					0.51	0.13	16.5	1.5	3200	2
BECKER	8/16/06					0.02	0.00	0.5	0.01	60	2
BECKER	8/16/06					0.39	0.10	12.5	1.25	2000	2
STOREDAHL'S	6/21/06					0.22	0.06	7	2	1200	2
STOREDAHL'S	8/17/06					0.36	0.09	11.5	1	1700	2
STOREDAHL'S	8/17/06					0.12	0.03	4	0.06	550	2
STOREDAHL'S	8/17/06					0.02	0.00	0.5	0.01	60	2
						0.00	0.00	0			
		Gallons	Acres	Canes		Gallons	Gallons	Gallons	Acres	Canes	
		0.79	0.56	700		2.74	0.71	83.89	7.13	15394	
TOTAL ACRES 7.69						TOTAL CANES TREATED 16,904					

2006	HERBICIDE USAGE TOTALS PER SITE (INJECTION / FOLIAR)										
East Fork Lewis River											
First Season Treatment Sites											
Site	Date	Injection	Total	Total		Foliar	Foliar	Applied	Total	Total	Trtmt
Location	Applied	Aqua -Master	Acres	Canes		Aqua -Master	Habitat	Gallons	Acres	Canes	Season
ZINSER	5/8/06	0.132	0.06	100		0.0155	0.004	0.5	0.065	250	1
ATWELL'S	5/11/06	0.132	0.25	100		0.0000	0.0000	0			1
ATWELL'S	5/12/06	0.119	0.24	90		0.0039	0.0010	0.125	0.01	20	1
ATWELL'S	6/6/06	0.034	0.11	198		0.0078	0.0020	0.25	0.01	13	1
ATWELL'S	1/6/00	0.53	0.24	400		0.0041	0.0011	0.132	0.01	33	1
ATWELL'S	6/7/06	1.06	0.5	800		0.0310	0.0080	1	0.25	300	1
ATWELL'S	6/13/06	0.528	0.21	400		0.0620	0.0160	2	0.12	200	1
ATWELL'S	7/7/06					0.1395	0.0360	4.5	0.12	855	1
ATWELL'S	8/11/06					0.2480	0.0640	8	0.12	1375	1
ATWELL'S	9/5/06					0.2790	0.0720	9	0.12	1629	1
ROPER RD	5/12/06					0.0155	0.0040	0.5	0.002	80	1
ROPER RD	5/12/06	0.004	0.0002	3		0.0000	0.0000	0			1
ROPER RD	5/12/06					0.0039	0.0010	0.125	0.0002	3	1
RICHARDS	5/17/06	0.016	0.01	7		0.0020	0.0005	0.065	0.11	13	1
RICHARDS	7/26/06					0.0000	0.0000	0.0003	0.01	14	1
SWANSONS	5/31/06	0.046	0.12	35		0.0000	0.0000	0			1
SWANSONS	8/8/06					0.1705	0.0440	5.5	0.12	800	1
SWANSONS	8/7/06					0.4650	0.1200	15	0.33	2800	1
SWANSONS	9/5/06					0.0620	0.0160	2	0.06	150	1
SWANSON S	6/2/06					0.1085	0.0280	3.5	0.12	625	1
SWANSONS	7/13/06					0.1783	0.0460	5.75	1	600	1
SWANSONS	8/3/06					0.1860	0.0480	6	0.12	900	1
LOWERY	6/1/06	0.063	0.06	48		0.0000	0.0000	0			1
LOWERY	7/12/06	0.4	0.06	300		0.0000	0.0000	0			1
WALL O' KNOT	8/28/06					0.0465	0.0120	1.5	0.01	175	1
WALL O' KNOT	8/28/06					0.1550	0.0400	5	0.25	750	1
DYBRK MNT. RVRSIDE	8/2/06					0.02	0.00	0.5	0.01	100	1

CLARK COUNTY
WASHINGTON
proud past, promising future

WEED MANAGEMENT DEPARTMENT

2006	HERBICIDE USAGE TOTALS PER SITE (INJECTION / FOLIAR)

East Fork Lewis River

First Season Treatment Sites -- CONTINUED

Site	Date	Injection		Total	Total		Foliar		Foliar	Applied	Total	Total	Trtmnt
Location	Applied	Aqua -Master		Acres	Canes		Aqua -Master		Habitat	Gallons	Acres	Canes	Season
SHULTZ	7/26/06						0.12		0.03	4	0.25	744	1
SHULTZ	9/5/06						0.08		0.02	2.5	0.25	466	1
MONROE	9/5/06						0.08		0.02	2.5	0.25	466	1
ROY	9/5/06						0.06		0.02	2	0.25	372	1
BECKER	8/9/06						0.14		0.04	4.5	0.5	600	1
BECKER	8/28/06						0.03		0.01	1	0.01	100	1
BECKER	8/28/06						0.22		0.06	7	0.12	850	1
BELOW DAYBRK PK	8/2/06						0.03		0.01	1	0.06	150	1
		Gallons		Acres	Canes		Gallons		Gallons	Gallons	Acres	Canes	
		3.06		1.86	2481		3.01		0.78	96.95	4.67	15583	

TOTAL ACRES 6.53

TOTAL CANES TREATED 18,064

2006	HERBICIDE USAGE TOTALS PER SITE (INJECTION / FOLIAR)											
North Fork Lewis River												
Second Season Treatment Sites												
Site	Date	Injection	Total	Total		Foliar	Foliar	Applied	Total	Total	Trtmnt
Location	Applied	Aqua -Master	Acres	Canes		Aqua -Master	Habitat	Gallons	Acres	Canes	Season
WOODLND BOAT RP	5/31/06					0.00716	0.00185	0.231	0.12	45	2
MERWIN DAM	6/5/06					0.0310	0.0080	1	0.5	200	2
MERWIN DAM	6/5/06					0.0233	0.0060	0.75	0.5	75	2
MERWIN DAM	6/30/06					0.0930	0.0240	3	0.06	250	2
MERWIN DAM	8/14/06					0.04650	0.01200	1.5	0.12	175	2
OLD LEWIS HATCHRY	6/5/06					0.0078	0.0020	0.25	0.12	33	2
OLD LEWIS HATCHRY	6/5/06					0.0195	0.0050	0.63	0.25	50	2
OLD LEWIS HATCHRY	7/11/06	0.099	0.001	75		0.00	0.00	0			2
OLD LEWIS HATCHRY	7/11/06					0.0155	0.0040	0.5	0.12	60	2
OLD LEWIS HATCHRY	8/11/06					0.05	0.01	1.5	0.12	75	2
LEWIS RVR GOLF	6/5/06					0.0078	0.0020	0.25	0.06	48	2
LEWIS RVR GOLF	6/13/06	0.36	0.52	275		0.0930	0.0240	3	1.48	900	2
LEWIS RVR GOLF	7/28/06					0.1085	0.0280	3.5	0.12	650	2
BRITT	NF					0.0388	0.01	1.25	0.01	13	2
HAPPA PARK	6/9/06					0.0388	0.0100	1.25	0.06	220	2
HAPPA PARK	6/9/06					0.0078	0.0020	0.25	0.06	28	2
HAPPA PARK	6/22/06					0.0078	0.0020	0.25	0.12	20	2
HAPPA PARK	7/14/06					0.2170	0.0560	7	0.25	1600	2
HAPPA PARK	7/17/06					0.1860	0.0480	6	0.12	1650	2
HAPPA PARK	7/24/06					0.3720	0.0960	12	1	270	2
HAPPA PARK	7/24/06					0.0233	0.0060	0.75	0.06	100	2
HAPPA PARK	7/27/06	0.132	0.06	100		0.1163	0.0300	3.75	0.06	750	2
HAPPA PARK	8/10/06					0.1085	0.0280	3.5	0.12	500	2
BIG KAHUNA	6/15/06	1.52	0.63	1150		0.0930	0.0240	3	0.12	675	2
BIG KAHUNA	6/23/06	0.165	0.06	125		0.2170	0.0560	7	0.44	1575	2
BIG KAHUNA	6/26/06	0.793	0.25	600		0.4030	0.1040	13	0.25	3000	2
BIG KAHUNA	7/10/06					0.1860	0.0480	6	0.25	1350	2
BIG KAHUNA	7/10/06	0.66	0.24	500		0.4340	0.1120	14	0.26	2800	2
BIG KAHUNA	7/18/06					0.3100	0.0800	10	0.5	2200	2

2006	HERBICIDE USAGE TOTALS PER SITE (INJECTION / FOLIAR)											
North Fork Lewis River												
Second Season Treatment Sites												
Site	Date	Injection	Total	Total		Foliar	Foliar	Applied	Total	Total	Trtmnt	
Location	Applied	Aqua -Master	Acres	Canes		Aqua -Master	Habitat	Gallons	Acres	Canes	Season	
BLW MERWIN/LG STE	6/23/06	0.66	0.50	500		0.1860	0.0480	6	0.50	1900	2	
BLW MERWIN/LG STE	6/23/06					0.2403	0.0620	7.75	0.5	1743	2	
BLW MERWIN/LG STE	8/24/06					0.1550	0.0400	5	0.05	650	2	
1ST CLARK CO. SITE	6/23/06	0.013	0.01	10		0.0155	0.0040	0.5	0.11	150	2	
1ST CLARK CO. SITE	8/22/06	0.598	0.06	338		0.2480	0.0640	8	0.06	1200	2	
EAGLE ISL.	6/27/06					0.039	0.010	1.25	0.12	275	2	
RADIO ISL.	6/27/06					0.1240	0.0320	4	1	800	2	
RADIO ISL.	6/27/06					0.0620	0.0160	2	1	600	2	
RADIO ISL.	7/19/06					0.5425	0.1400	17.5	0.5	2250	2	
RADIO ISL.	9/8/06					0.3255	0.0840	10.5	0.25	1600	2	
BUFFALO RANCH	6/27/06					0.2325	0.0600	7.5	1	1500	2	
BUFFALO RANCH	8/3/06					0.3720	0.0960	12	0.25	1800	2	
BUFFALO RANCH	8/7/06					0.0310	0.0080	1	0.01	150	2	
BUFFALO RANCH	8/11/06					0.4030	0.1040	13	0.25	1900	2	
G. KATES	7/14/06					0.1860	0.0480	6	1	1140	2	
CW CLIFF- ABV HAPPA	7/17/06					0.1240	0.0320	4	0.06	1000	2	
		GALLONS	ACRES	CANES		GALLONS	GALLONS	GALLONS	ACRES	CANES		
		5	2.33	3673		8.45	2.18	272.74	15.70	49541		
TOTAL ACRES	18.03						TOTAL CANES		53,214			

HERBICIDE USAGE TOTALS PER SITE (INJECTION / FOLIAR)

2006

TREATED AREA DESCRIPTION : **CEDAR CREEK**

SITE LOCATION NAME	DATE APPLIED	INJECTION AQUA - MASTR GALLONS	TOTAL ACRES	TOTAL CANES	FOLIAR AQUA - MASTR GALLONS	FOLIAR HABITAT GALLONS	APPLIED GALLONS	TOTAL ACRES	TOTAL CANES	TRTMNT SEASON
BIG KAHUNA	8/4/06				0.279	0.072	9	0.25	1575	1
BIG KAHUNA	8/23/06				0.465	0.120	15	0.33	2250	1
BLW MERWIN/LG STE	8/22/06				0.031	0.008	1	0.01	45	1
G. KATES	7/17/06				0.233	0.060	7.5	0.25	1688	1
G. KATES	7/31/06				0.186	0.048	6	0.12	1600	1
G. KATES	9/1/06				0.217	0.056	7	1	1250	1
ABV KAHUNA BEND 1	7/8/06				0.124	0.032	4	0.12	1000	1
ABV KAHUNA BEND 2	7/8/06				0.016	0.004	0.5	0.01	175	1
LOTT	7/17/06				0.016	0.004	0.5	0.01	45	1
LOTT	7/31/06	0.56	0.12	390	0.000	0.000	0			1
LOTT	9/1/06				0.016	0.004	0.5	0.5	75	1
JOHNSON CRK	7/31/06	0.297	0.06	225	0.109	0.028	3.5	0.06	600	1
JOHNSON CRK	9/1/06				0.047	0.012	1.5	0.25	225	1
COW PASTURE	8/24/06				0.2325	0.0600	7.5	0.25	600	1
COW PASTURE	8/24/06				0.0853	0.0220	2.75	0.25	200	1
COW PASTURE	8/25/06				0.4030	0.1040	13	0.25	1950	1
BEAVER BEACH	8/25/06				0.0233	0.0060	0.75	0.06	100	1
		GALLONS	ACRES	CANES	GALLONS	GALLONS	GALLONS	ACRES	CANES	
		0.86	0.18	615	2.48	0.64	80.00	3.72	13378	
	TOTAL ACRES		4			TOTAL CANES			13993	

SECOND SEASON TREATMENT

SITE / LOCATION / NAME	DATE APPLIED	INJECTION AQUA - MASTER GALLONS	TOTAL ACRES	TOTAL CANES	FOLIAR AQUA - MASTER GALLONS	FOLIAR HABITAT GALLONS	APPLIED GALLONS	TOTAL ACRES	TOTAL CANES	TRTMNT SEASON
GRIST MILL	6/9/06				0.0039	0.0010	0.125	0.01	12	2
WAGGNER	6/12/06	0.066	0.12	51	0.0000	0.0000	0			2
AMBOY BRIDGE	6/22/06				0.0039	0.0010	0.125	0.01	10	2
AMBOY - WRIGHT BR.	7/3/06				0.0930	0.0240	3	0.12	700	2
AMBOY BR. - TERR. PK	9/25/06				0.0620	0.0160	2	0.12	175	2
TERR. PK - 211TH	9/26/06				0.0001	0.0000	0.002	0.01	10	2
211TH - WRIGHT BR.	9/28/06				0.0465	0.0120	1.5	0.12	160	2
RAVN CMP - ROSILIUS	10/5/06				0.1550	0.0400	5	0.33	300	2
SECT. BLW ROSILIUS	10/10/06				0.1938	0.0500	6.25	0.25	525	2
RAVN CMP - GRIST M	10/11/06				0.0930	0.0240	3	0.12	150	2
JONES - CEDR MOUTH	10/12/06				0.2325	0.0600	7.5	0.5	550	2
		GALLONS	ACRES	CANES	GALLONS	GALLONS	GALLONS	ACRES	CANES	
		0.07	0.12	51	0.88	0.23	28.50	1.59	2592	
	TOTAL ACRES		1.71			CANE TOTAL		2674		

HERBICIDE USAGE TOTALS PER SITE (INJECTION / FOLIAR)

2006

TREATED AREA DESCRIPTION : **CHELATCHIE CREEK**

SECOND SEASON TREATMENT

SITE LOCATION NAME	DATE APPLIED	INJECTION AQUA - MASTER GALLONS	TOTAL ACRES	TOTAL CANES	FOLIAR AQUA - MASTER GALLONS	FOLIAR HABITAT GALLONS	APPLIED GALLONS	TOTAL ACRES	TOTAL CANES	TRTMNT SEASON
AMBOY SCHOOL DIST.	5/31/06				0.002	0.001	0.063	0.01	8	2
AMBOY SCHOOL DIST.	8/14/06				0.002	0.001	0.063	0.01	8	2
NYLAND	5/31/06				0.054	0.014	1.75	0.25	200	2
OSHIRO	5/31/06				0.016	0.004	0.5	0.12	150	2
OSHIRO	7/27/06				0.008	0.002	0.25	0.01	28	2
NW PULP	6/20/06				0.023	0.006	0.75	0.06	150	2
NW PULP	6/20/06				0.016	0.004	0.5	0.06	50	2
NW PULP	8/15/06				0.016	0.004	0.5	0.01	25	2
					0.000	0.000	0			
		GALLONS	ACRES	CANES	GALLONS	GALLONS	GALLONS	ACRES	CANES	
		0	0	0	0.14	0.04	4.376	0.53	619	

HERBICIDE USAGE TOTALS PER SITE (INJECTION / FOLIAR)

TREATED AREA DESCRIPTION : **JENNY CREEK**

2006

THIRD SEASON TREATMENT

SITE LOCATION NAME	DATE APPLIED	INJECTION AQUA - MASTER GALLONS	TOTAL ACRES	TOTAL CANES	FOLIAR AQUA - MASTER GALLONS	FOLIAR HABITAT GALLONS	APPLIED GALLONS	TOTAL ACRES	TOTAL CANES	TRTMNT SEASON
TOGNETTI	6/28/06				0.03	0.01	1	0.03	200	3
TOGNETTI	8/1/06				0.01	0.002	0.25	0.03	20	3
JENNY CREEK FARM	7/6/06				0.01	0.002	0.25	0.06	35	3
JENNY CREEK MOUTH	7/6/06	0.05	0.01	38	0.12	0.03	3.75	0.11	300	3
JENNY CREEK BRIDGE	7/6/06				0.02	0.01	0.75	0.12	76	3
JUNK YRD DOG	7/6/06				0.07	0.02	2.25	0.06	400	3
		GALLONS	ACRES	CANES	GALLONS	GALLONS	GALLONS	ACRES	CANES	
		0.05	0.01	38	0.26	0.07	8.25	0.41	1031	

TOTAL ACRES	0.67	CANE TOTAL	1069

HERBICIDE USAGE TOTALS PER SITE (INJECTION / FOLIAR)

TREATED AREA DESCRIPTION : **PUP CREEK**

2006

SECOND SEASON TREATMENT

SITE LOCATION NAME	DATE APPLIED	INJECTION AQUA - MASTR GALLONS	TOTAL ACRES	TOTAL CANES	FOLIAR AQUA - MASTR GALLONS	FOLIAR HABITAT GALLONS	APPLIED GALLONS	TOTAL ACRES	TOTAL CANES	TRTMNT SEASON
PUP CREEK	7/13/06				0.202	0.052	6.5	0.25	1285	2
PUP CREEK	7/26/06				0.155	0.040	5	1	1000	2
PUP CREEK	7/27/06				0.155	0.040	5	1	950	2
PUP CREEK	9/7/06				0.258	0.067	8.33	0.25	1250	2
PUP CREEK	9/7/06				0.341	0.088	11	1.5	1650	2
PUP CREEK	9/11/06				0.558	0.144	18	1.5	4500	2
PUP CREEK	9/11/06				0.279	0.072	9	1	2250	2
PUP CREEK	9/12/06				0.395	0.102	12.75	1	2498	2
		GALLONS	ACRES	CANES	GALLONS	GALLONS	GALLONS	ACRES	CANES	
		0.00	0.00	0.00	2.34	0.60	75.58	7.50	15383	

TOTAL ACRES	7.5	TOTAL CANES	15383

2006

HERBICIDE USAGE TOTALS PER SITE (INJECTION / FOLIAR)

TREATED AREA DESCRIPTION : **SPEELYAI CREEK**

SECOOND SEASON TREATMENT

SITE LOCATION NAME	DATE APPLIED	INJECTION AQUA - MASTER GALLONS	TOTAL ACRES	TOTAL CANES	FOLIAR AQUA - MASTER GALLONS	FOLIAR HABITAT GALLONS	APPLIED GALLONS	TOTAL ACRES	TOTAL CANES	TRTMNT SEASON
SPEELYAI BRDG SW	6/5/06				0.0930	0.0240	3	0.12	219	2
SPEELYAI BRDG NW	6/5/06				0.0004	0.0001	0.012	0.06	5	2
SPEELYAI BRDG SW	6/29/06				0.0155	0.0040	0.5	0.06	40	2
		GALLONS	ACRES	CANES	GALLONS	GALLONS	GALLONS	ACRES	CANES	
		0	0	0	0.11	0.03	3.51	0.24	264	

HERBICIDE USAGE TOTALS PER SITE (INJECTION / FOLIAR)

2006

TREATED AREA DESCRIPTION : **HIMALAYAN / CHELATCHIE TRIB**

FIRST SEASON TREATMENT

SITE LOCATION NAME	DATE APPLIED	INJECTION AQUA - MASTER GALLONS	TOTAL ACRES	TOTAL CANES	FOLIAR AQUA - MASTER GALLONS	FOLIAR HABITAT GALLONS	APPLIED GALLONS	TOTAL ACRES	TOTAL CANES	TRTMNT SEASON
HIMALAYAN SITE	6/14/06				0.2713	0.0700	8.75	0.12	22050	1
HIMALAYAN SITE	6/29/06				0.4108	0.1060	13.25	0.33	33390	1
HIMALAYAN SITE	7/27/06				0.2790	0.0720	9	0.12	22680	1
HIMALAYAN SITE	8/14/06				0.12	0.03	4	0.06	10080	1
HIMALAYAN SITE	10/13/06				0.06	0.02	2	0.12	100	1
		GALLONS	ACRES	CANES	GALLONS	GALLONS	GALLONS	ACRES	CANES	
		0	0	0	1.15	0.30	37.00	0.75	88300	

HERBICIDE USAGE TOTALS PER SITE (INJECTION / FOLIAR)

2006

TREATED AREA DESCRIPTION : **CLARK CO. UPLAND SITES**

THIRD SEASON TREATMENT

SITE LOCATION NAME	DATE APPLIED	INJECTION AQUA - MASTER GALLONS	TOTAL ACRES	TOTAL CANES	FOLIAR AQUA - MASTER GALLONS	FOLIAR HABITAT GALLONS	APPLIED GALLONS	TOTAL ACRES	TOTAL CANES	TRTMNT SEASON
YACOLT RDSIDE	5/25/06				0.0002	0.0001	0.008	0.001	2	3
HOYTE	5/30/06	0.036	0.06	30	0.0037	0.0010	0.119	0.06	30	3
HOYTE	6/29/06				0.02	0.00	0.5	0.5	60	3
HOYTE	8/3/06				0.0078	0.0020	0.25	0.12	18	3
LUCIA RD RXR	5/25/06				0.0006	0.0002	0.019	0.005	3	3
PORTER	5/30/06				0.0087	0.0022	0.28	0.12	70	3
369TH/LA CENTER	6/28/06				0.0233	0.0060	0.75	0.01	75	3
369TH/LA CENTER	8/1/06				0.0078	0.0020	0.25	0.01	20	3
384TH/LA CENTER	6/28/06				0.0078	0.0020	0.25	0.01	50	3
		GALLONS	ACRES	CANES	GALLONS	GALLONS	GALLONS	ACRES	CANES	
		0.04	0.06	30	0.08	0.02	2.43	0.84	328	

2006

HERBICIDE USAGE TOTALS PER SITE (INJECTION / FOLIAR)

TREATED AREA DESCRIPTION : **CLARK CO. UPLAND SITE**

SECOND SEASON TREATMENT

SITE LOCATION NAME	DATE APPLIED	INJECTION AQUA - MASTER GALLONS	TOTAL ACRES	TOTAL CANES	FOLIAR AQUA - MASTER GALLONS	FOLIAR HABITAT GALLONS	APPLIED GALLONS	TOTAL ACRES	TOTAL CANES	TRTMNT SEASON
SMITH	5/31/06				0.0049	0.0013	0.159	0.12	40	2
HOUSTON	5/11/06				0.0233	0.0060	0.75	0.25	100	2
HOUSTON	6/21/06				0.02	0.01	0.75	0.06	150	2
HOUSTON	7/21/06				0.0034	0.0009	0.11	0.01	30	2
MCDOWEL	5/11/06				0.0016	0.0004	0.053	0.125	10	2
MCDOWEL	6/1/06	0.115	0.06	87	0.0000	0.0000	0			2
MCDOWEL	6/12/06	0.019	0.06	15	0.0000	0.0000	0			2
MCDOWEL	7/21/06				0.0002	0.0001	0.008	0.01	40	2
LYNCH	5/3/06				0.0022	0.0006	0.071	0.12	18	2
LYNCH	7/11/06				0.0078	0.0020	0.25	0.01	30	2
ROTSCHY	8/3/06				0.0078	0.0020	0.25	0.01	16	2
HEALY RD	6/9/06				0.0039	0.0010	0.125	0.01	8	2
HEALY RD	8/15/06				0.0039	0.0010	0.125	0.01	8	2
STAR RANCH	7/26/06	0.026	0.03	20	0.7750	0.2000	25	0.03	50	2
		GALLONS	ACRES	CANES	GALLONS	GALLONS	GALLONS	ACRES	CANES	
		0.16	0.15	122	0.86	0.22	27.65	0.77	500	
	TOTAL ACRES		0.92				TOTAL CANES			622

2006

HERBICIDE USAGE TOTALS PER SITE (INJECTION / FOLIAR)

TREATED AREA DESCRIPTION : **CLARK COUNTY - UPLAND SITES**

FIRST SEASON TREATMENT

SITE LOCATION NAME	DATE APPLIED	INJECTION AQUA - MASTER GALLONS	TOTAL ACRES	TOTAL CANES	FOLIAR AQUA - MASTER GALLONS	FOLIAR HABITAT GALLONS	APPLIED GALLONS	TOTAL ACRES	TOTAL CANES	TRTMNT SEASON
FRAZIER	5/16/06				0.093	0.024	3	0.25	1500	1
FRAZIER	5/31/06				0.171	0.044	5.5	1.00	1900	1
FRAZIER	6/9/06				0.202	0.052	6.5	1.00	2200	1
FRAZIER	6/30/06				0.171	0.044	5.5	0.50	1250	1
FRAZIER	7/20/06				0.279	0.072	9	1.00	2700	1
FRAZIER	7/28/06				0.047	0.012	1.5	0.12	200	1
FRAZIER	8/3/06				0.124	0.032	4	0.12	1200	1
FRAZIER	9/12/06				0.217	0.056	7	0.12	1050	1
AROLA	5/15/06	0.079	0.63	60	0.016	0.004	0.5	0.62	200	1
AROLA	5/15/06	0.048	0.0011	36	0.008	0.002	0.25	0.0012	30	1
AROLA	6/9/06				0.002	0.001	0.063	0.06	8	1
AROLA	7/12/06	0.132	0.001	100	0.000	0.000	0			1
AROLA	8/3/06	0.0005	0.0005	50	0.008	0.002	0.25	0.0005	20	1
AROLA	8/15/06	0.046	0.06	35	0.000	0.000	0			1
MARY JOHNSON	6/9/06				0.010	0.003	0.33	0.06	87	1
BELYY	6/9/06	0.4	0.06	232	0.008	0.002	0.25	0.06	35	1
BELYY	7/24/06	0.013	0.005	10	0.008	0.002	0.25	0.005	30	1
BAKER	6/20/06	0.066	0.06	50	0.0155	0.004	0.5	0.06	150	1
BRATTON RD	7/20/06				0.004	0.001	0.125	0.01	12	1
BECKY HILL	7/26/06				0.1705	0.044	5.5	0.12	1350	1
HALBERG	5/30/06	0.024	0.01	18	0.093	0.024	3	1.49	772	1
HALBERG	10/5/06				0.0465	0.012	1.5	0.112	150	1
PEITZ	6/14/06	0.66	0.25	500	0.0465	0.012	1.5	0.25	500	1
PEITZ	7/11/06	0.33	0.01	185	0	0	0			1
PEITZ	8/1/06				0.093	0.024	3	0.01	300	1
MERRIAM	8/1/06	0.231	0.3	175	0	0	0			1
DOLLARS CORNER	5/25/06	0.12	0.12	91	0.0062	0.0016	0.2	0.11	50	1
DOLLARS CORNER	9/1/06				0.0062	0.0016	0.2	0.01	20	1
		GALLONS	ACRES	CANES	GALLONS	GALLONS	GALLONS	ACRES	CANES	
		2.15	1.51	1542	1.84	0.48	59.42	7.09	15714	

TOTAL ACRES	8.6	TOTAL CANES	17325

2006

HERBICIDE USAGE TOTALS PER SITE (INJECTION / FOLIAR)

TREATED AREA DESCRIPTION : **COWLITZ CO. UPLAND SITES**

SECOND SEASON TREATMENT

SITE LOCATION NAME	DATE APPLIED	INJECTION AQUA - MASTER GALLONS	TOTAL ACRES	TOTAL CANES	FOLIAR AQUA - MASTER GALLONS	FOLIAR HABITAT GALLONS	APPLIED GALLONS	TOTAL ACRES	TOTAL CANES	TRTMNT SEASON
HUFFMAN	6/5/06				0.0245	0.0063	0.79	0.12	150	2
HUFFMAN	6/19/06				0.0034	0.0009	0.11	0.06	27	2
HUFFMAN	8/18/06				0.0245	0.0063	0.79	0.01	100	2
YALE SCHOOL	6/5/06				0.0853	0.0220	2.75	0.12	350	2
YALE SCHOOL	6/19/06				0.0155	0.0040	0.5	0.06	136	2
YALE SCHOOL	7/11/06				0.0310	0.0080	1	0.06	150	2
YALE SCHOOL	8/18/06				0.0155	0.0040	0.5	0.06	100	2
CHAMBERLIN	6/5/06				0.0078	0.0020	0.25	0.12	116	2
TRICOLA	6/5/06				0.0233	0.0060	0.75	0.12	62	2
TRICOLA	6/19/06				0.0050	0.0013	0.16	0.06	41	2
		GALLONS	ACRES	CANES	GALLONS	GALLONS	GALLONS	ACRES	CANES	
		0.00	0.00	0.00	0.24	0.06	7.60	0.79	1232	

2006

HERBICIDE USAGE TOTALS PER SITE (INJECTION / FOLIAR)

TREATED AREA DESCRIPTION : **COWLITZ CO. UPLAND SITES**

FIRST SEASON TREATMENT

SITE	DATE	INJECTION		TOTAL	TOTAL		FOLIAR		FOLIAR	APPLIED	TOTAL	TOTAL	TRTMNT
LOCATION	APPLIED	AQUA - MASTER		ACRES	CANES		AQUA - MASTER		HABITAT	GALLONS	ACRES	CANES	SEASON
NAME		GALLONS					GALLONS		GALLONS				
MARY JOHNSON	6/9/06						0.0102		0.0026	0.33	0.06	87	1
BELYYS	6/9/06	0.4		0.11	232		0.0078		0.0020	0.25	0.01	35	1
BELYYS	7/24/06	0.013		0.005	10		0.0078		0.0020	0.25	0.005	30	1
JACKMAN	6/19/06	0.046		0.06	35		0.0310		0.0080	1	1.44	250	1
JACKMAN	7/11/06						0.0233		0.0060	0.75	0.12	160	1
JACKMAN	7/28/06	0.003		0.01	2		0.0155		0.0040	0.5	0.11	120	1
FILLA/LIL KALAMA	7/12/06	0.793		0.06	600		0.0000		0.0000	0			1
FILLA/LIL KALAMA	7/28/06						0.0775		0.0200	2.5	0.06	300	1
STUART	7/14/06	0.56		0.17	425		0.0465		0.0120	1.5	0.16	275	1
		GALLONS		ACRES	CANES		GALLONS		GALLONS	GALLONS	ACRES	CANES	
		1.82		0.42	1304		0.22		0.06	7.08	1.97	1257	

TOTAL ACRES	2.38	TOTAL CANES	2561